

1. A method of recognizing punctuation in computer-implemented speech
recognition, the method comprising:

performing speech recognition on an utterance to produce a recognition result for the
utterance;

5 identifying a non-verbalized punctuation mark in a recognition result; and
formatting the recognition result based on the identification.

2. The method as in claim 1 wherein identifying the non-verbalized punctuation
mark includes predicting the non-verbalized punctuation mark using at least one text feature
10 and at least one acoustic feature related to the utterance.

3. The method as in claim 2 wherein the acoustic feature includes a period of
silence.

15 4. The method as in claim 2 wherein the acoustic feature includes a function of
pitch of words near the period of silence.

5. The method as in claim 2 wherein the acoustic feature includes an average
pitch of words near the period of silence.

20 6. The method as in claim 2 wherein the acoustic feature includes a ratio of an
average pitch of words near the period of silence.

7. The method as in claim 1 wherein formatting the recognition result includes
25 controlling or altering spacing relative to the non-verbalized punctuation mark.

8. The method as in claim 1 wherein formatting the recognition result includes
controlling or altering capitalization of words relative to the non-verbalized punctuation
mark.

30 9. The method as in claim 1 wherein:
the non-verbalized punctuation mark includes a period, and

formatting the recognition result includes inserting an extra space after the period and capitalizing a next word following the period.

10. The method as in claim 1 further comprising:
 - 5 selecting a portion of the recognition result to be corrected that includes the non-verbalized punctuation mark; and
 - correcting the portion of the recognition result that includes the non-verbalized punctuation mark with one of a number of correction choices.
- 10 11. The method as in claim 10 wherein at least one of the correction choices includes a change to the non-verbalized punctuation mark.
- 15 12. The method as in claim 10 wherein at least one of the correction choices does not include the non-verbalized punctuation mark.
13. An apparatus comprising a computer-readable medium having instructions stored thereon that when executed by a machine result in at least the following:
 - performing speech recognition on an utterance to produce a recognition result for the utterance;
 - 20 identifying a non-verbalized punctuation mark in a recognition result; and
 - formatting the recognition result based on the identification.
14. A method of correcting incorrect text associated with recognition errors in computer-implemented speech recognition, comprising:
 - 25 performing speech recognition on an utterance to produce a recognition result for the utterance, wherein the recognition result includes non-verbalized punctuation;
 - selecting a portion of the recognition result to be corrected that includes the non-verbalized punctuation; and
 - correcting the portion of the recognition result that includes the non-verbalized punctuation with one of a number of correction choices.
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15. The method as in claim 14 wherein at least one of the correction choices includes a change to the non-verbalized punctuation.

16. The method as in claim 14 wherein at least one of the correction choices does
5 not include the non-verbalized punctuation.

17. The method as in claim 14 where the non-verbalized punctuation includes a non-verbalized punctuation mark.

10 18. The method as in claim 14 wherein correcting the portion of the recognition result includes changing the non-verbalized punctuation and reformatting text surrounding the non-verbalized punctuation to be grammatically consistent with the changed non-verbalized punctuation.

15 19. The method as in claim 18 wherein changing the non-verbalized punctuation and reformatting text surrounding the non-verbalized punctuation is in response to a single user action.

20 20. An apparatus comprising a computer-readable medium having instructions stored thereon that when executed by a machine result in at least the following:
performing speech recognition on an utterance to produce a recognition result for the utterance, wherein the recognition result includes non-verbalized punctuation;
selecting a portion of the recognition result to be corrected that includes the non-verbalized punctuation; and
25 correcting the portion of the recognition result that includes the non-verbalized punctuation with one of a number of correction choices.

21. A method of recognizing punctuation in computer-implemented speech recognition dictation, the method comprising:
30 performing speech recognition on an utterance to produce a recognition result for the utterance;
identifying a non-verbalized punctuation mark in a recognition result; and

determining where to insert the non-verbalized punctuation mark within the recognition result based on the identification using at least one text feature and at least one acoustic feature related to the utterance to predict where to insert the non-verbalized punctuation mark.

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22. The method as in claim 21 wherein the acoustic feature includes a period of silence.

10 23. The method as in claim 21 wherein the acoustic feature includes a function of pitch of words near the period of silence.

24. The method as in claim 21 wherein the acoustic feature includes an average pitch of words near the period of silence.

15 25. The method as in claim 21 wherein the acoustic feature includes a ratio of an average pitch of words near the period of silence.

26. An apparatus comprising a computer-readable medium having instructions stored thereon that when executed by a machine result in at least the following:

20 performing speech recognition on an utterance to produce a recognition result for the utterance;

identifying a non-verbalized punctuation mark in a recognition result; and
determining where to insert the non-verbalized punctuation mark within the recognition result based on the identification using at least one text feature and at least one acoustic feature related to the utterance to predict where to insert the non-verbalized punctuation mark.

25 27. A graphical user interface for correcting incorrect text associated with recognition errors in computer-implemented speech recognition, comprising:

30 a window to display a selected recognition result including non-verbalized punctuation associated with an utterance; and

a list of recognition alternatives with at least one of the recognition alternatives including a change to the non-verbalized punctuation and associated adjustments in spacing and other punctuation.

5 28. The graphical user interface of claim 27 wherein the non-verbalized punctuation includes a period.

29. The graphical user interface of claim 27 wherein the non-verbalized punctuation includes a comma.

10 30. The graphical user interface of claim 27 wherein:
the change to the non-verbalized punctuation includes a change from a period to a comma, and
the associated adjustments in spacing and other punctuation includes removing a
15 space after the comma and uncapitalizing a word following the comma.

31. The graphical user interface of claim 27 wherein:
the change to the non-verbalized punctuation includes a change from a comma to a period, and
20 the associated adjustments in spacing and other punctuation includes adding a space after the period and capitalizing a word following the period.

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